## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of requesting an uplink data retransmission in a CDMA (Code Division Multiple Access) communication system using a downlink dedicated physical channel (DL DPCH) to which a downlink dedicated physical control channel (DL DPCCH) and a downlink dedicated physical data channel (DL DPDCH) are mapped, the DL DPCCH ~~including~~ having a transport power control (TPC) field, a transport format combination indicator (TFCI) field, and a pilot field, and the DL DPDCH ~~including~~ having first and second data fields for delivering downlink data, ~~the method~~ comprising the steps of:

receiving data on an enhanced uplink dedicated channel (EUDCH), generating a p-bit acknowledgement (ACK) if the received data is normal, and generating a p-bit non-acknowledgement (NACK) if the received data is abnormal;

~~deciding~~ determining a bit position to transmit the ACK or NACK ~~at~~ in the first and second data fields of the DL DPDCH; and

puncturing p bits in the ~~decided~~ determined position, inserting the ACK or NACK in the punctured bit positions, and transmitting the DL DPCH with the ACK or NACK.

2. (Original) The method of claim 1, wherein the ACK or NACK is transmitted in one of N slots forming a transmit time interval (TTI) of the DL DPCH.

3. (Currently Amended) The method of claim 2, wherein the position to transmit the ACK or NACK ~~at~~ is ~~decided~~ randomly determined according to the number of data bits transmitted on the DL DPDCH and the number (p) of bits required to transmit the ACK or NACK.

4. (Currently Amended) The method of claim 2, wherein the position to transmit the ACK or NACK at~is determined decided by

$$P(i) = rand(N_{data} - p + 1)$$

5                                                      ......(5)

where P(i) indicates a position to transmit the ACK/NACK at~in an ith slot, $N_{data}$ is the number of data bits in one DL DPCH slot, p is the number of bits required to transmit the ACK/NACK, and rand(x) is a function for generating a random variable in a range from 0 to x-1.

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5. (Currently Amended) The method of claim 2, wherein the position to transmit the ACK or NACK at is decided determined randomly according tobased on a system frame number (SFN), a DL DPCH slot index, ~the number of data bits transmitted on the DL DPDCH, and the number (p) of bits required to

15  transmit the ACK or NACK.

6. (Currently Amended) The method of claim 2, wherein the position to transmit the ACK or NACK at is decided determined by

20       $$P(i) = \{SFN \times 15slots + current\_slot\_number\} mod(N_{data} - p + 1)$$

......(6)

where P(i) indicates a position to transmit the ACK/NACK at~in an ith slot, current_slot_number is a current slot index of the DL DPCH, SFN is the SFN of a current cell, $N_{data}$ is the number of data bits in one DL DPCH slot, and p is the

25  number of bits required to transmit the ACK/NACK.

7. (Currently Amended) The method of claim 1, wherein the ACK or NACK is transmitted distributedly across N slots forming a TTI of the DL DPCH.

30       8. (Currently Amended) The method of claim 7, wherein the position to

transmit the ACK or NACK at is ~~decided~~ determined randomly ~~according to~~ based on the number of data bits transmitted on the DL DPDCH, the number (p) of bits required to transmit the ACK or NACK, and the number (N) of slots included in the TTI.

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9. (Currently Amended) The method of claim 7, wherein the position to transmit the ACK or NACK at is ~~decided~~ determined by

$$P(i) = \begin{cases} rand(N_{data} - \lfloor p/N \rfloor + 1), & n = 0,1,\ldots,N-2 \\ rand(N_{data} - (p - \lfloor p/N \rfloor \times (N-1)) + 1), & n = N-1 \end{cases}$$

10 ~~.....(7)~~

where P(i) indicates a position to transmit the ACK or NACK ~~at~~ in an ith slot, $\lfloor x \rfloor$ is a maximum natural number equal to or less than x, $N_{data}$ is the number of data bits in one DL DPCH slot, p is the number of bits required to transmit the ACK/NACK, rand(x) is a function for generating a random variable in a range

15 from 0 to x-1, ~~n~~ n is a slot index in a TTI (~~n~~ n=0, 1, . . ., N-1), ~~and~~ N is the number of slots in one TTI~~, and n=i modulo N, modulo being an operation that computes the remainder of a division.~~ and n=i modulo N, modulo being an operation that computes the remainder of a division.

20      10. (Currently Amended) The method of claim 7, wherein the position to transmit the ACK or NACK at is ~~decided~~ determined by

$$P(i) = \{SFN \times 15slots + current\_slot\_number\} \bmod(N_{data} - \lfloor p/N \rfloor + 1), \quad n = 0,1,\ldots,N-2$$
$$P(i) = \{SFN \times 15slots + current\_slot\_number\} \bmod(N_{data} - (p - \lfloor p/N \rfloor \times (N-1)) + 1),$$
$$n = N-1$$

~~.....(8)~~

25 where P(i) indicates a position to transmit the ACK/NACK ~~at~~ in an ith slot, current_slot_number is a current slot index of the DL DPCH, SFN is the SFN of a current cell, $N_{data}$ is the number of data bits in one DL DPCH slot, p is the number

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of bits required to transmit the ACK/NACK, ~~i~~n is a slot index in a TTI (~~i~~n=0, 1, . . ., N-1), N is the number of slots in one TTI, and n=i modulo N, modulo being an operation that computes the remainder of a division.

5    11. (Currently Amended) An apparatus for requesting an uplink data retransmission in a CDMA (Code Division Multiple Access) communication system using a downlink dedicated physical channel (DL DPCH) to which a downlink dedicated physical control channel (DL DPCCH) and a downlink dedicated physical data channel (DL DPDCH) are mapped, the DL DPCCH 10 ~~including~~ having a transport power control (TPC) field, a transport format combination indicator (TFCI) field, and a pilot field, and the DL DPDCH having ~~including~~ first and second data fields for delivering downlink data, ~~the apparatus~~ comprising:

a puncturer for generating a p-bit acknowledgement (ACK) if data 15 received on an enhanced uplink dedicated channel (EUDCH) is normal or a p-bit non-acknowledgement (NACK) ~~according to whether~~if data received on the EUDCH is ~~data received on an enhanced uplink dedicated channel (EUDCH) is normal or~~ abnormal, and puncturing p bits in a position to transmit the ACK or NACK ~~at~~in the first and second data fields of the DL DPDCH, ~~decided~~ said 20 position determined under a predetermined control;

a puncturing controller for ~~deciding~~ determining the position to transmit the ACK or NACK ~~at~~in the first and second data fields of the DL DPDCH; and

a DL DPCH transmitter for inserting the ACK or NACK in the punctured bit positions and transmitting the DL DPCH with the ACK or NACK.
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12. (Currently Amended) The apparatus of claim 11, wherein the puncturing controller ~~decides~~ determines the puncturing position for the ACK or NACK so that the ACK or NACK is transmitted in one of N slots forming a transmit time interval (TTI) of the DL DPCH.
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13. (Currently Amended) The apparatus of claim 12, wherein the puncturing controller determines decides the puncturing position for the ACK or NACK randomly according to the number of data bits transmitted on the DL DPDCH and the number (p) of bits required to transmit the ACK or NACK.

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14. (Currently Amended) The apparatus of claim 12, wherein the puncturing controller determines decides the puncturing position for the ACK or NACK by

10
$$P(i) = rand(N_{data} - p + 1)$$

.....(9)

where P(i) indicates a position to transmit the ACK/NACK at in an ith slot, $N_{data}$ is the number of data bits in one DL DPCH slot, p is the number of bits required to transmit the ACK/NACK, and rand(x) is a function for generating a random

15 variable in a range from 0 to x-1.

15. (Currently Amended) The apparatus of claim 12, wherein the puncturing controller determines decides the puncturing position for the ACK or NACK randomly according to based on a system frame number (SFN), a DL

20 DPCH slot index, the number of data bits transmitted on the DL DPDCH, and the number (p) of bits required to transmit the ACK or NACK.

16. (Currently Amended) The apparatus of claim 12, wherein the puncturing controller determines decides the puncturing position for the ACK or NACK by

25

$$P(i) = \{SFN \times 15slots + current\_slot\_number\} mod(N_{data} - p + 1)$$

.....(10)

where P(i) indicates a position to transmit the ACK/NACK at in an ith slot, current_slot_number is a current slot index of the DL DPCH, SFN is the SFN of a

30 current cell, $N_{data}$ is the number of data bits in one DL DPCH slot, and p is the

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number of bits required to transmit the ACK/NACK.

17. (Currently Amended) The apparatus of claim 11, wherein the puncturing controller determines decides the puncturing position for the ACK or
5  NACK –so that the ACK or NACK is transmitted distributedly across N slots forming a TTI of the DL DPCH.

18. (Currently Amended) The apparatus of claim 17, wherein the puncturing controller determines decides the puncturing position for the ACK or
10  NACK randomly according tobased on the number of data bits transmitted on the DL DPDCH, the number (p) of bits required to transmit the ACK or NACK, and the number (N) of slots included in the TTI.

19. (Currently Amended) The apparatus of claim 17, wherein the position
15  to transmit the ACK or NACK at is determineddecided by

$$P(i) = \begin{cases} rand(N_{data} - \lfloor p/N \rfloor + 1), & n = 0,1,...,N-2 \\ rand(N_{data} - (p - \lfloor p/N \rfloor \times (N-1)) + 1), & n = N-1 \end{cases}$$

$$\cdots\cdots(11)$$

where P(i) indicates a position to transmit the ACK or NACK at in an ith slot,
20  $\lfloor x \rfloor$ is a maximum natural number equal to or less than x, $N_{data}$ is the number of data bits in one DL DPCH slot, p is the number of bits required to transmit the ACK/NACK, rand(x) is a function for generating a random variable in a range from 0 to x-1, n is a slot index in a TTI (n=0, 1, . . ., N-1), and N is the number of slots in one TTI, and n=i modulo N, modulo being an operation that computes
25  the remainder of a division, and n=i modulo N, modulo being an operation that computes the remainder of a division.

20. (Currently Amended) The apparatus of claim 17, wherein the

punturing controller <u>determines</u> decides the puncturing position for the ACK or NACK by

$$P(i) = \{SFN \times 15slots + current\_slot\_number\}\bmod(N_{data} - \lfloor p/N \rfloor + 1), \quad n = 0, 1, ..., N-2$$
$$P(i) = \{SFN \times 15slots + current\_slot\_number\}\bmod(N_{data} - (p - \lfloor p/N \rfloor \times (N-1)) + 1),$$
$$n = N-1$$

5 <del>. . . . . (12)</del>

where P(i) indicates a position to transmit the ACK/NACK at in an ith slot, current_slot_number is a current slot index of the DL DPCH, SFN is the SFN of a current cell, $N_{data}$ is the number of data bits in one DL DPCH slot, p is the number of bits required to transmit the ACK/NACK, n is a slot index in a TTI (n=0, 1, . . ., 

10 N-1), N is the number of slots in one TTI, and n=i modulo N, modulo being an operation that computes the remainder of a division.

21. (Currently Amended) A method of receiving an uplink data retransmission request in a CDMA (Code Division Multiple Access)

15 communication system using a downlink dedicated physical channel (DL DPCH) to which a downlink dedicated physical control channel (DL DPCCH) and a downlink dedicated physical data channel (DL DPDCH) are mapped, the DL DPCCH including having a transport power control (TPC) field, a transport format combination indicator (TFCI) field, and a pilot field, and the DL DPDCH

20 including having first and second data fields for delivering downlink data, the method comprising the steps of:

transmitting data on an enhanced uplink dedicated channel (EUDCH), and receiving the a DL DPCH signal;

deciding determining a position to receive a p-bit acknowledgement

25 (ACK) or a p-bit non-acknowledgement (NACK) at in the first and second data fields of the DL DPDCH; and

extracting p bits at the <u>determined</u> decided position as the ACK or NACK.

22. (Currently Amended) The method of claim 21, wherein the ACK or NACK is received in one of N slots forming a transmit time interval (TTI) of the DL DPCH.

5       23. (Currently Amended) The method of claim 22, wherein the position to receive the ACK or NACK at is determined decided randomly according tobased on the number of data bits transmitted on the DL DPDCH and the number (p) of bits required to represent the ACK or NACK.

10      24. (Currently Amended) The method of claim 21, wherein the ACK or NACK is received distributedly across N slots forming a TTI of the DL DPCH.

25. (Currently Amended) The method of claim 24, wherein the position to receive the ACK or NACK at is determined decided randomly according
15 tobased on the number of data bits transmitted on the DL DPDCH, the number (p) of bits required to represent the ACK or NACK, and the number (N) of slots included in the TTI.

26. (Currently Amended) An apparatus for receiving an uplink data
20 retransmission request in a CDMA (Code Division Multiple Access) communication system using a downlink dedicated physical channel (DL DPCH) to which a downlink dedicated physical control channel (DL DPCCH) and a downlink dedicated physical data channel (DL DPDCH) are mapped, the DL DPCCH including having a transport power control (TPC) field, a transport
25 format combination indicator (TFCI) field, and a pilot field, and the DL DPDCH including having first and second data fields for delivering downlink data, the method comprising the steps of:

a DL DPCH receiver for transmitting data on an enhanced uplink dedicated channel (EUDCH), and receiving the-a DL DPCH signal;
30      a puncturing controller for determining deciding-a position to receive a p-

bit acknowledgement (ACK) or a p-bit non-acknowledgement (NACK) at in the first and second data fields of the DL DPDCH; and

a puncturer for extracting p bits at the determined decided position as the ACK or NACK.

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27. (Currently Amended) The apparatus of claim 26, wherein the ACK or NACK is received in one of N slots forming a transmit time interval (TTI) of the DL DPCH.

10        28. (Currently Amended) The apparatus of claim 27, wherein the puncturing controller randomly decides determines the position to receive the ACK or NACK randomly at accordingbased on to the number of data bits transmitted on the DL DPDCH and the number (p) of bits required to represent the ACK or NACK.

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29. (Currently Amended) The apparatus of claim 25, wherein the ACK or NACK is received distributedly across N slots forming a TTI of the DL DPCH.

30. (Currently Amended) The apparatus of claim 29, wherein the 20 puncturing controller randomly decides determines the position to receive the ACK or NACK randomly at according tobased on the number of data bits transmitted on the DL DPDCH, the number (p) of bits required to represent the ACK or NACK, and the number (N) of slots included in the TTI.

25        31. (Currently Amended) A method of requesting an uplink data retransmission in a CDMA (Code Division Multiple Access) communication system using a downlink dedicated data channel for delivering downlink data, comprising the steps of:

receiving data on an uplink dedicated channel, generating a p-bit 30 acknowledgement (ACK) if the received data is normal, and generating a p-bit

non-acknowledgement (NACK) if the received data is abnormal;

deciding determining a position to transmit the ACK or NACK at in the downlink dedicated data channel; and

puncturing p bits in the decided determined position, inserting the ACK

5  or NACK in the punctured bit positions, and transmitting the downlink dedicated data channel with the ACK or NACK.


32. (Currently Amended) The method of claim 31, wherein the ACK or NACK is transmitted in one of N slots forming a transmit time interval (TTI) of

10  the downlink dedicated data channel.


33. (Currently Amended) The method of claim 32, wherein the position to transmit the ACK or NACK at is determined decided randomly according tobased on the number of data bits transmitted on the downlink dedicated data

15  channel and the number (p) of bits required to transmit the ACK or NACK.


34. (Currently Amended) The method of claim 32, wherein the position to transmit the ACK or NACK at is determined decided randomly according tobased on a system frame number (SFN), a slot index of the dedicated physical

20  channel, the number of data bits transmitted on the dedicated physical channel, and the number (p) of bits required to transmit the ACK or NACK.


35. (Currently Amended) The method of claim 31, wherein the ACK or NACK is transmitted distributedly across N slots forming a TTI of the downlink

25  dedicated data channel.


36. (Currently Amended) The method of claim 35, wherein the position to transmit the ACK or NACK at is determined decided randomly according tobased on the number of data bits transmitted on the downlink dedicated data

30  channel, the number (p) of bits required to transmit the ACK or NACK, and the

number (N) of slots included in the TTI.

37. (Currently Amended) The method of claim 2, wherein the position to transmit the ACK or NACK at is determined ~~decided~~ randomly ~~according~~ 5 ~~to~~based on a connection frame number (CFN), a slot index of the DL DPCH, the number of data bits transmitted on the DL DPDCH, and the number (p) of bits required to transmit the ACK or NACK.

38. (Currently Amended) The apparatus of claim 12, wherein the 10 puncturing controller ~~randomly decides~~ determines the position to transmit the ACK or NACK randomly ~~at according to~~based on a CFN, a slot index of the DL DPCH, the number of data bits transmitted on the DL DPDCH, and the number (p) of bits required to transmit the ACK or NACK.

15 39. (Currently Amended) The method of claim 32, wherein the puncturing controller ~~randomly decides~~ determines the position to transmit the ACK or NACK randomly ~~at according to~~based on a CFN, a slot index of the dedicated physical channel, the number of data bits transmitted on the dedicated physical data channel, and the number (p) of bits required to transmit the ACK or 20 NACK.

40. (Currently Amended) The method of claim 6, wherein the SFN is set to a different value for each cell.

25 41. (Currently Amended) The method of claim 37, wherein the CFN is set to a different value for each cell by assigning a different offset to the cell.

42. (Currently Amended) The apparatus of claim 16, wherein the SFN is set to a different value for each cell.

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43. (Currently Amended) The apparatus of claim 38, wherein the CFN is set to a different value for each cell by assigning a different offset to the cell.

44. (Currently Amended) The method of claim 10, wherein the SFN is set to a different value for each cell.

45. (Currently Amended) The apparatus of claim 20, wherein the SFN is set to a different value for each cell.

46. (Currently Amended) The method of claim 39, wherein the CFN is set to a different value for each cell by assigning a different offset to the cell.